

Detailed Action

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims #30 through 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Burns et al. (U.S. Pub. No.2004/0219732 A1), hereinafter referred to as 'Burns'.

Burns shows the claimed invention, as shown in figures 1-38 and corresponding text, in an apparatus and manufacturing method, **pertaining to claim #30**, a method of creating a pattern on a body, said method comprising: arranging a liquid to be between a template and said body; orientating said template proximate to said liquid (**page #6, paragraph 0047**); and applying an electrical field between said template and said body move a portion of said liquid to avoid to spread said liquid over said body to form a film, while preventing discontinuities in said film (**page #8, paragraph 0104-0106; page #9, paragraph 0109; page #10, paragraph 0113**).

Pertaining to claim #31, Burns shows a method wherein applying further includes applying an electric field of sufficient magnitude to overcome capillary forces of said liquid between said template and said body. (page #6, paragraph 0047).

Pertaining to claim #32, Burns shows a method further including providing said template with an electrically conductive layer that is transparent to radiation that causes said liquid material to polymerize and cross-link and, with applying said electric field further including applying a voltage to said conductive layer (page #8, paragraph 0105; page #9, paragraph 0108 and 0110; page #10, paragraph 0114; page #13, paragraph 0191-0192; page #14, paragraph 0199; page #16, paragraph 0211).

Pertaining to claim #33, Burns shows a method further including forming said template from fused-silica and including an electrically conductive layer that is transparent to radiation that causes said liquid material to polymerize and cross-link and, with applying said electric field further including applying a voltage to said conductive layer (page #8, paragraph 0105; page #9, paragraph 0108 and 0110; page #10, paragraph 0114; page #13, paragraph 0191-0192; page #14, paragraph 0199; page #16, paragraph 0211; page #15, paragraph 0201).

Pertaining to claim #34, Burns shows a method wherein said radiation includes ultra-violet light (page #13, paragraph 0192).

Pertaining to claim #35, Burns shows a method wherein providing further includes providing said template with a said electrically conductive layer that is contiguous in a region in

superimposition with said liquid (**figure #2, items 100, 200, 300 and 400; page #8, paragraph 0105; page #9, paragraph 0108 and 0110; page #10, paragraph 0114; page #13, paragraph 0191-0192; page #14, paragraph 0199; page #16, paragraph 0211; page #15, paragraph 0201).**

Pertaining to claim #36, Burns shows a method wherein providing further includes providing said template with a plurality of spaced apart electrically conductive layers in a region in superimposition with said liquid. (**figure #2, items 100, 200, 300 and 400; page #8, paragraph 0105; page #9, paragraph 0108 and 0110; page #10, paragraph 0114; page #13, paragraph 0191-0192; page #14, paragraph 0199; page #16, paragraph 0211; page #15, paragraph 0201).**

Pertaining to claim #37, Burns shows a method wherein providing further includes providing said template with a plurality of spaced apart electrically conductive layers in a region in superimposition with said liquid and consecutively applying a voltage to a subset of said plurality of spaced-apart electrically conductive layers (**figure #2, items 100, 200, 300 and 400; page #8, paragraph 0105; page #9, paragraph 0108 and 0110; page #10, paragraph 0114; page #13, paragraph 0189 and 0191-0192; page #14, paragraph 0199; page #15, paragraph 0201).**

Pertaining to claim #38, Burns shows a method wherein providing further includes providing said template with a plurality of spaced apart electrically conductive layers and concurrently applying a common voltage level to a subset of said plurality of electrically

conductive layers (**figure #2, items 100, 200, 300 and 400; page #8, paragraph 0105; page #9, paragraph 0108 and 0110; page #10, paragraph 0114; page #13, paragraph 0189 and 0191-0192; page #14, paragraph 0199; page #16, paragraph 0211; page #15, paragraph 0201).**

Pertaining to claim #39, Burns shows, a method wherein providing further includes providing said template with a said electrically conductive layer that is contiguous in a region in superimposition with said liquid (**figure #2, items 100, 200, 300 and 400; page #8, paragraph 0105; page #9, paragraph 0108 and 0110; page #10, paragraph 0114; page #13, paragraph 0189 and 0191-0192; page #14, paragraph 0199; page #16, paragraph 0211; page #15, paragraph 0201).**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims #40 -48 are rejected under 35 U.S.C. 102(c) as being anticipated by Sager et al (2004/0084080 A1), hereinafter referred to as ‘Sager’.

Pertaining to claim #40, Sager shows, a nano-imprint lithography system, a method of forming pattern, said method comprising; arranging a liquid to be between a nano-imprint

template and a substrate, wherein said nano-imprint template comprises a plurality of nano-dimensional features (**page #1, paragraph 0011-0013**); orientating said nano-imprint template proximate to said liquid; and applying an electric field between said nano-imprint template and said substrate to spread said liquid over said substrate to form a film while preventing discontinuities in said film (**page #1, paragraph 0014; page #4, paragraph 0070 and 0072**).

Pertaining to claim #41, Sager shows, a method wherein applying further includes applying an electric field of sufficient magnitude to overcome capillary forces of said liquid between said nano-imprint template and said substrate (**page #1, paragraph 0014**).

Pertaining to claim #42, Sager shows, a method further including providing said nano-imprint template with an electrically conductive layer that is transparent to radiation that causes said liquid material to polymerize and cross-link and with applying said electric field further including applying a voltage to said conductive layer (**page #6, paragraph 0087**).

Pertaining to claim #43, Sager shows, a method wherein providing further includes providing said template with a said electrically conductive layer that is contiguous in a region in superimposition with said liquid (**page #7, paragraph 0091; page #6, paragraph 0087; page #10, paragraph 0129**).

Pertaining to claim #44, Sager shows, a method wherein said radiation includes ultra-violet light (**page #3, paragraph 0056**).

Pertaining to claim #45, Sager shows, a method wherein providing further includes providing said nano-imprint template with a said electrically conductive layer that is contiguous in a region in superimposition with said liquid (**page #7, paragraph 0091 and 0101-0102**).

Pertaining to claim #46, Sager shows, a method wherein providing further includes providing said nano-imprint template with a plurality of spaced apart electrically conductive layers (**fig. #1B, items #111 and 112**) in a region in superimposition with said liquid (**page #4, paragraph 0069-0070; page #7, paragraph 0091 and 0101-0102**).

Pertaining to claim #47, Sager shows, a method wherein providing further includes providing said nano-imprint template with a plurality of spaced apart electrically conductive layers in a region in superimposition said with said liquid and consecutively applying voltage to a subset (**item #905**) of said plurality of spaced-apart electrically conductive layers (**items #906 and 904**) (**page #7, paragraph 0091 and 0101-0102; page #9, paragraph 0128**).

Pertaining to claim #48, Sager shows, a method wherein providing further includes providing said nano-imprint template with a plurality of spaced apart electrically conductive layers and concurrently applying a common voltage level to a subset of said plurality of electrically conductive layers (**page #7, paragraph 0091 and 0101-0102; page #9, paragraph 0128**).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim #49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sager et al (2004/0084080 A1), hereinafter referred to as 'Sager'.

Sager substantially shows the claimed invention as shown the rejection above.

Sager fails to show, with respect to claim #46, a plurality of conductive layers.

Sager (6852920 B2) teaches, in a similar method for nano-architected assembly, with respect to **claim #46** a plurality of conductive layers (**column #11, line 49-58**).

Pertaining to claim #39, Sager shows, a method wherein providing further includes providing said nano-imprint template with plurality of spaced apart electrically conductive layer and concurrently applying differing voltage levels to a subset of said plurality of electrically conductive layers (**page #7, paragraph 0091 and 0101-0102; page #9, paragraph 0128**). The Examiner makes note that Sager does not explicitly state that a differing voltage lever is being applied to the subset level of the conductors. However, the Examiner takes the position that Sager does show that a voltage can be applied by way of the subsets to the components and that the components can be used either separately as a single cell or collectively as a group of cells. Also, the Examiner notes that Sager does not limit the amount of voltage that can be placed on

the cells, but instead shows that the limit depends on the current density availability of the materials being used; thus, allowing the choice of applied voltage amount to be arbitrarily decided by the need of the user. The Examiner takes the position that applying a differing current/voltage to the single/collective cells is a matter of choice and does not represent a novel inventive step in the method of producing power through photovoltaic cells. For these reasons, the Examiner takes the position that, the decision to use differing current would have been obvious to one that is ordinarily skilled to the art to produce the amount of current needed, and that the rejection is proper.

Response to Arguments

Applicant's arguments filed February 26, 2007 have been fully considered but they are not persuasive. The Examiner takes the position that Burns teaches a transparent template, as can be seen from the previous rejection. To further clarify the Examiner's position, the Applicant is referred to page #9, paragraph 0105-0109. Also, the Examiner refers the Applicant to page #6, paragraph 0047, where Burns clearly states that an "Electroheological fluid shall be defined as suspensions of extremely fine particles (up to 50 microns) in non-conducting fluids. The apparent viscosity of these fluids changes reversibly in response to an electric field". The Examiner takes the position that the definition of polymerization requires that the material to transition through a bonding stage without the loss of other materials. The Examiner takes the position that this is exactly what happens when a sharp transition from liquid to solid occurs

(Burns, page #10, paragraph 0114). For the above reasons, the Examiner takes the position that the rejection is proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' Stevenson whose telephone number is (571) 272 1683. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on 571-272-2194. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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